

SWBAT: communicate an original experiment about waves using a Vee chart

Jan 4-7:20 AM

Welcome!!!

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Friday-Tuesday 22-26 April 2016



Opening Question:

Who might care about this kind of experiment?

Centering

Where can you find examples of Vee Charts?

⑥ SPEAKERS  
WATER PARK: HOW FREQ AFFECTS  
HOW FAR BETWEEN

Sep 7-7:04 AM

Projects: V-Chart ideas **GROUPS: 1-3 PEOPLE**

How does extra mass (~~staples~~ or paper clips) on the end of the straws affect the wave speed? **OF A WAVE MACHINE?**

How does extra ~~tension~~ (mass hanging from the ~~end~~ <sup>device</sup>) affect the wave speed? **OF A WAVE MACHINE**

How does length of tube affect the frequency of sound produced when spun?

Or, make me an offer... (Ruben's tube???)

Today:

**① FOCUS QUESTION (PICK ONE)**

**② CONCEPT MAP: "I THINK... BECAUSE... I'VE NOTICED..."**

**③ - LIST OF MATERIALS**  
 - STEP-BY-STEP PROCEDURE  
 - DIAGRAM WITH LABELS

**Monday:**

- BUILD WAVE MACHINE X 3 **≠ ANG**

- COLLECT & RECORD DATA

- TEAM MEMBER NOTING STEPS OF PROCEDURE

**Tuesday:**

- Mythbusters  
 - Catch up  
 - Make graph

Frequency means: How many per unit time

Period means: How much time for 1

Amplitude means: how far from middle

Apr 12-7:15 AM

**① FOCUS QUESTION (PICK ONE)**

How does changing LENGTH OF SPRING affect FREQUENCY for standing waves in a long spring held by two people?

**② CONCEPT MAP: "I THINK... AS SPRING LONGER FREQ ↓ BECAUSE... I'VE NOTICED..."**

**③ - LIST OF MATERIALS**  
 - STEP-BY-STEP PROCEDURE  
 - DIAGRAM WITH LABELS

What kind of experiments could we do about sound, waves, or frequency? **FLAME TUBE**

**SLINKY** **HOW DOES HEIGHT OF FLAME CHANGE WITH VOLUME FREQ**


How does the FREQ FOR STANDING WAVES IN SLINKY CHANGE WITH WAVELENGTH

Apr 22-10:36 AM

## Project Vee Chart

- Part 1: Write down your question  
How DOES \_\_\_\_\_ AFFECT WAVE SPEED FOR A STRAW WAVE MACHINE?
- Part 2: Concept Map  
I THINK AS... BECAUSE... I NOTICED...
- Part 3: Methods and Materials  
- MATERIALS - STEP BY STEP - PICTURE LABELLED
- Part 4: Data  
- TABLE W/ UNITS - MORE DATA  $\Rightarrow$  BETTER!
- Part 5: Graph  

**RULES**  
 - LABELS  
 - UNITS



# WASHERS	TIME (SEC)
- Part 6: Results  
- ODD DATA EXPLAINED - DESCRIPTION / LINE? - UP/DN/FLAT? / CURVE? - REACH LIMIT
- Part 7: Knowledge Claim  
- ANSWER TO Q - DATA / #S TO SUPPORT - BETTER NEXT TIME?
- Part 8: Value Claim  
- WHO WOULD CARE - WHY? X2  
   $\hookrightarrow$  ENOUGH TO PAY!
- Part 9: Glossary  
 $\hookrightarrow$  BLUE CONCEPT SHEET?  
 $\hookrightarrow$  FORCE? MASS?

Jan 26-7:43 AM

## 1-step per Post-It:

- 1) BUILD THE STRAW WAVE MACHINE & HANG IT
- 2) WEIGH STRAW MACHINE w/ 1 WASHER
- 3) TIME A PULSE: START TIMER WHEN FLICKING BOTTOM STRAW & STOP WHEN PULSE RETURNS TO BOTTOM
- 4) REPEAT 3 TIMES AND AVERAGE RECORD RESULTS
- 5) - ADD A PAPER CLIP TO EACH STRAW  
- ADD A WASHER TO THE BOTTOM
- 6) REPEAT STEPS... AT LEAST 5 TIMES

Apr 20-12:30 PM

## Mythbusters Day 3: Singer break glass?

1) WHAT'S DIFFERENT ABOUT MEYER'S THIRD TRY?

2) CAN AN AMATEUR BREAK THE GLASS WITH A SPEAKER?

3) COULD AN UN-AIDED SINGER BREAK THE GLASS?

Apr 24-10:12 AM